

DETECTION OF MULTIPLE WATERMARKS AND IMPROVED
WATERMARK CALIBRATION SIGNALS

Abstract of the Disclosure

5 Steganographic calibration signals (sometimes termed “orientation signals,”
“marker signals,” reference signals,” “grid signals,” etc.) are sometimes included with
digital watermarking signals so that subsequent distortion of the object thereby marked
(e.g., a digital image file, audio clip, document, etc.) can later be discerned and
compensated-for. Digital watermark detection systems sometimes fail if the object
10 encompasses several separately-watermarked components (e.g., a scanned magazine page
with several different images, or photocopy data resulting from scanning while several
documents are on the photocopier platen). Each component may include its own
calibration signal, confusing the detection system. In accordance with certain
embodiments, this problem is addressed by a proximity-based approach, and/or a
15 multiple grid-based approach. In accordance with other embodiments, the calibration
signal can – itself – convey watermark information, so it serves both a calibration and a
payload-conveyance function.